the system information blocks are transmitted to the air, and SIB_POS is a parameter representing a location of each system information block segment within a transmission period. As a value of the SIB_REP for the master information block, 8 is assigned in a frequency division duplex mode, and, as a value of the SIB_POS for the master information block, 0 is assigned in the frequency division duplex mode. Other than the master information block, the SIB_REP values for the system information blocks are given differently for different system information blocks, and the SIB_POS values are given differently for different information block segments. In other words, though system information block segments in the same system information block have the same SIB_REP values, the system information block segments in the same system information block have different SIB_POS values. Table 1 shows one example of the IB_REP values and the SEG_POS values. Referring to FIG. 1A and FIG. 1B, it can be known that segments in the same system information block have the same IB_REP values.

Table 1

IB	Segment	IB_REP	SEG_POS	IB	Segment	IB_REP	SEG_POS
MIB	SEG1	8	0	SIB6	SEG1	64	14
SIB1	SEG1	64	2	SIB6	SEG2	64	22
SIB2	SEG1	64	4	SIB6	SEG3	64	26
SIB3	SEG1	64	6	SIB6	SEG4	64	30
SIB4	SEG1	64	10	SIB7	SEG1	64	34
SIB1	SEG1	64	12	SIB11	SEG1	64	36
SIB2	SEG2	64	18	SIB12	SEG1	64	42
SIB3	SEG3	64	20				
SIB4	SEG4	64	28				

[007] The base station determines whether RSIM is transmitted to the air or not presently with reference to the SIB_REP value and the SIB_POS value of theRSIM.

[008] The base station (Node B) has an SFN counter for each cell. The SFN counter increases by 1 for every 10ms in a count range of 0 – 4095 timer count. The SFN counter counts the SFN as '0' when 10ms is passed after a time point the SFN is 4095. The

transmitted to the air, and the SIB_REP and SIB_POS, the parameters of theRSIMs.

SFNtx % SIB_REP = SIB_POS ---------- (1),

That is, the base station implements scheduling of the system information block segments by a method in which the base station transmits the system information block segments to the air according to the equation (1). If there are several system information segments where are transmitted at same time, they consist of a RSIM.

[009] The scheduling is a mechanism in which the system information block segments are transmitted to the air at different intervals by preset parameters. The equation (1) may be expressed as the following equation (2).

$$SFNtx = IB\_REP*n + SEG\_POS, \quad (0 \le n \le M)$$

Where, the unexplained symbol 'M' represents a greatest value satisfying IB_REP*n<4096.

[010] In summary, upon reception of the system information update message from the RNC, the base station is required to transmit respective RSIM generated by system information block segments at time points of the SFNtx values calculated by using the parameters of the IB_REP value and the SEG_POS value to the air, periodically.

[011] By summarizing the foregoing steps, a process for implementing a system information broadcasting by the base station will be explained.

[012] At first, upon reception of a system information update message from the RNC, the base station makes RSIM using information block segments & scheduling parameters, the base station stores all RSIMs of the master information block, scheduling block and the system information blocks, and the scheduling parameters of SIB_REP and SIB_POS in a memory of the base station. Then, the base station searches the memory for aRSIM having scheduling parameters meeting the equation (1) for the SFN of the time point

at every 20ms, and transmits the RSIM to the air. The system information is information required to be transmitted always as far as the base station is in operation. Therefore, at the worst case, it is required to calculate the SFNtx for all the information block segments during the foregoing process by using the scheduling parameters at every 20ms based on the equation (1), to require too much processing time for picking up a pertinent information block segment.

SUMMARY OF THE INVENTION

[013] Accordingly, the present invention is directed to an asynchronous mobile communication system, and a method for implementing a system information broadcasting function in an asynchronous mobile communication system that substantially obviates one or more of the problems due to limitations and disadvantages of the related art.

[014] An object of the present invention is to provide an asynchronous mobile communication system which can save a processing time period required for finding an information block segment, and a method for implementing a system information broadcasting function in the asynchronous mobile communication system.

[015] Another object of the present invention is to provide an asynchronous mobile communication system which can optimize use of a memory, and a method for implementing a system information broadcasting function in the asynchronous mobile communication system.

[016] Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

[017] To achieve these and other advantages and in accordance with the purpose of